

NGUYEN Quang-Duy



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Education

- 2017 – 2020 **PhD in Computer Science**
École Doctorale des Sciences Pour l'Ingénieur, University Clermont-Auvergne, France
UR TSCF, MathNUM département, INRAE (Irstea), Clermont-Ferrand, France
PhD defense : 16/07/2020
- 2014 – 2015 **Master 2 in Networks and Communicating Systems**
University Claude Bernard Lyon I, France
Note : 15.31/20.00 - Rank : 1/60
- 2013 – 2014 **Master 1 in Computer Science**
Institute Francophone for Information Technology (IFI), Hanoi, Vietnam
Note : 14.20/20.00
- 2007 – 2012 **Engineer of Information Technology in Computer Engineering**
Hanoi University of Science and Technology, Vietnam
Note : 14.96/20.00

Experience

- 12/2021 – present **Postdoctoral Researcher**
LSEA laboratory, CEA List, Palaiseau, France
Project : Tools and Methods for System Complex Engineering in Industrie 4.0
Keywords : Industrie 4.0, LocalSEA testbed, OPC UA, TurtleBot3, Niryo Ned, ROS
- 10/2020 – 09/2021 **Postdoctoral Researcher**
LTCl laboratory, Télécom-Paris, Palaiseau
Project : OPC-UA PubSub for Caméléon
Keywords : IIoT, SNCF, OPC UA PubSub, Embedded System, Zephyr OS, Node-RED, C
- 01/2017 – 07/2020 **PhD Student**
UR TSCF, MathNUM département, INRAE
Project : ConnecSens, AgroTechnoPôle
Keywords : Agriculture, IoT, Ontology, Reasoning, OWL, SWRL, Java, Python
- 08/2016 – 10/2016 **Research Engineer**
Programmation, Networks and Systems team, LaBRI laboratory, Bordeaux, France
Project : Le Palais de la Mémoire
Keywords : Sounds, Method of Loci, Distributed Algorithms, Beacons, BLE, Android
- 04/2015 – 07/2016 **Master 2 Intern / Research Engineer**
Networks team, ICube laboratory, Strasbourg, France
Project : FIT/IoT-lab
Keywords : Multihoming, Mobility, Contiki, TelosB, Python, C/C++
- 01/2014 – 07/2014 **Master 1 Intern**
Institute Francophone for Information Technology
Project : Modeling and Diffusion of Mobile Users Profile
Keywords : Participative Detection, Modeling, Android, GAMA Platform, GAML

Publications*

- [CI.7] **Quang-Duy Nguyen**, Saadia Dhouib, Kunal Suri, and Fadwa Tmar, *"From Requirement Specification to OPC UA Information Model Design : A Product Assembly Line Monitoring Case Study"*, Proceedings of the 20th IEEE International Conference on Industrial Informatics (INDIN), Perth, Australia, 07/2022
- [CI.6] **Quang-Duy Nguyen**, Patrick Bellot, and Pierre-Yves Petton, *"An OPC UA PubSub Implementation Approach for Memory-Constrained Sensor Devices"*, Proceedings of the 31st IEEE International Symposium on Industrial Electronics (ISIE), Anchorage, United States, 06/2022
- [CI.5] **Quang-Duy Nguyen**, Fadwa Tmar, Yining Huang, and Saadia Dhouib, *"Early Lessons Learned from the Development of a Local OPC UA-based Robotic Testbed for Research"*, Proceedings of the 31st IEEE International Symposium on Industrial Electronics (ISIE), Anchorage, United States, 06/2022
- [CI.4] **Quang-Duy Nguyen**, Saadia Dhouib, Jean-Pierre Chanet, and Patrick Bellot, *"Towards a Web-of-Things Approach for OPC UA Field Device Discovery in the Industrial IoT"*, Proceedings of the 18th IEEE International Conference on Factory Communication Systems (WFCS), Pavia, Italy, 04/2022
- [CI.3] **Quang-Duy Nguyen**, Catherine Roussey, Patrick Bellot, and Jean-Pierre Chanet, *"Stack of Services for Context-Aware Systems : An Internet-Of-Things System Design Approach"*, Proceedings of the 15th IEEE International Conference on Computing and Communication Technologies (RIVF), Hanoi, Vietnam, 08/2021
- [JI.2] Julian Eduardo Plazas, Sandro Bimonte, Christophe de Vault, Michel Schneider, **Quang-Duy Nguyen**, Jean-Pierre Chanet, Hongling Shi, Kun Mean Hou, and Juan Carlos Corrales, *"A Conceptual Data Model and its Automatic Implementation for IoT-Based BI Applications : UML Profile and MDA Approach"*, IEEE Internet of Things Journal, 10/2020
- [T.1] **Quang-Duy Nguyen**, *"Interoperability and Upgradability Improvement for Context-Aware Systems in Agriculture 4.0"*, PhD thesis, University Clermont-Auvergne, France, 07/2020
- [CF.2] **Quang-Duy Nguyen**, Catherine Roussey, Maria Poveda-Villalón, Christophe de Vault, Jean-Pierre Chanet, and Camille Noûs, *"CASO et IRRIG deux ontologies pour le développement de systèmes contextuels : cas d'usage sur l'automatisation de l'irrigation"*, Proceedings of le 31es journées francophones d'Ingénierie des Connaissances (IC), Angers, France, 07/2020
- [JI.1] **Quang-Duy Nguyen**, Catherine Roussey, Maria Poveda-Villalón, Christophe de Vault, and Jean-Pierre Chanet, *"Development Experience of a Context-Aware System for Smart Irrigation using CASO and IRRIG ontologies"*, Special Issue "Semantic Technologies Applied to Agriculture", MDPI Applied Science Journal, 03/2020.
- [CI.2] Maria Poveda-Villalón, **Quang-Duy Nguyen**, Catherine Roussey, Christophe de Vault, and Jean-Pierre Chanet, *"Ontological Requirement Specification for Smart Irrigation Systems : A SOSA/SSN and SAREF Comparison"*, Proceedings of the 9th International Semantic Sensor Networks Workshop, 17th International Semantic Web Conference (ISWC), Monterey, United States, 10/2018
- [CF.1] Maria Poveda-Villalón, **Quang-Duy Nguyen**, Catherine Roussey, Christophe de Vault, and Jean-Pierre Chanet, *"Besoins ontologiques d'un système d'irrigation intelligent : Comparaison entre SSN et SAREF"*, Proceedings of le 29es journées francophones d'Ingénierie des Connaissances (IC), Nancy, France, 07/2020
- [CI.1] **Quang-Duy Nguyen**, Julien Montavont, Nicolas Montavont, and Thomas Noël, *"RPL Border Router Redundancy in the Internet of Things"*, Proceedings of the 15th International Conference on Ad-Hoc Networks and Wireless (Adhoc-Now), Lille, France, 07/2016

Summary
 First-authored items : 9/12
 Citations : 35
 H-index : 4
 I-index : 2
 Items by domains of interest :
 IoT (6), I4.0 (3), WSAN (4),
 OPC UA (4), KR&R (5)
 Source: Google Scholar

Research Skills

Project Management	■ ■ ■ ■ ■ ■ ■ ■ ■ ■
System Implementation	■ ■ ■ ■ ■ ■ ■ ■ ■ ■
Scientific Writing	■ ■ ■ ■ ■ ■ ■ ■ ■ ■
Presentation	■ ■ ■ ■ ■ ■ ■ ■ ■ ■

Linguistic

French	■ ■ ■ ■ ■ ■ ■ ■ ■ ■
English	■ ■ ■ ■ ■ ■ ■ ■ ■ ■
Vietnamese	■ ■ ■ ■ ■ ■ ■ ■ ■ ■

Technical Skills

Development Process	Mini-Waterfall, LOT, Agile
Operating System	Linux, Zephyr, Contiki, Android
Network Protocol	TCP/IP, OPC UA PubSub, MQTT
Vocabulary	SOSA/SSN, CASO, IRRIG, AAS
Tool	Protégé, GIT, Latex, Wireshark

Programming

C/C++	■ ■ ■ ■ ■ ■ ■ ■ ■ ■
Java	■ ■ ■ ■ ■ ■ ■ ■ ■ ■
Python	■ ■ ■ ■ ■ ■ ■ ■ ■ ■
Shell script	■ ■ ■ ■ ■ ■ ■ ■ ■ ■
Query language	■ ■ ■ ■ ■ ■ ■ ■ ■ ■

References

- **Dr. Saadia DHOUIB**, Senior researcher in LSEA laboratory, DILS department,CEA List
Project manager of the project "Tools and Methods for System Complex Engineering in Industrie 4.0"
✉ saadia.dhouib@cea.fr
- **Prof. Patrick BELLOT**, Director of CCN team, LTCI laboratory, INFRES department, Télécom-Paris
Project manager of the project "OPC-UA PubSub for Caméléon"
✉ patrick.bellot@telecom-paris.fr
- **Dr. Jean-Pierre CHANET**, Director of UR TSCE, MathNUM department, INRAE
Director of the thesis "Interoperability and Upgradability Improvement for Context-Aware Systems in Agriculture 4.0"
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